

WHAT IS CLAIMED IS:

1. A fuel cell, comprising:
 - a fuel electrode which has a fuel-diffusion layer for diffusing fuel;
 - an oxygen electrode which has an oxygen-diffusion layer for diffusing oxygen; and
 - an electrolyte layer which is arranged between the fuel electrode and the oxygen electrode,wherein the fuel-diffusion layer has higher water-repellency than that of the oxygen-diffusion layer.
2. A fuel cell, comprising:
 - a fuel electrode which has a fuel-diffusion layer for diffusing fuel and a fuel-reactive layer for having the fuel react, the fuel-reactive layer being in contact with the fuel-diffusion layer;
 - an oxygen electrode which has an oxygen-diffusion layer for diffusing oxygen and an oxygen-reactive layer for having the oxygen react, the oxygen-reactive layer being in contact with the oxygen-diffusion layer; and
 - an electrolyte layer which is arranged between the fuel electrode and the oxygen electrode,wherein the fuel-diffusion layer has higher water-repellency than that of the oxygen-diffusion layer.
3. The fuel cell as claimed in Claim 1, wherein each of the fuel-diffusion layer and the oxygen-diffusion layer has at least one water-repellent-material-containing layer which contains a material having water repellency, and the water-repellent-material-containing layer of the fuel-diffusion layer has higher water-repellency than that of the oxygen-diffusion layer.
4. The fuel cell as claimed in Claim 3, wherein the content

of the material having water repellency in the water-repellent-material-containing layer of the fuel-diffusion layer is larger than that of the material having water repellency in the water-repellent-material-containing layer of the oxygen-diffusion layer.

5. The fuel cell as claimed in Claim 4, wherein the content of the material having water repellency in the water-repellent-material-containing layer of the fuel-diffusion layer is larger than that of the material having water repellency in the water-repellent-material-containing layer of the oxygen-diffusion layer by at least 5wt%.

6. The fuel cell as claimed in Claim 3, wherein the content of the material having water repellency in the water-repellent-material-containing layer of the fuel-diffusion layer is 20 to 80wt%.

7. The fuel cell as claimed in Claim 3, wherein the content of the material having water repellency in the water-repellent-material-containing layer of the oxygen-diffusion layer is 15 to 65wt%.

8. The fuel cell as claimed in Claim 3, wherein the water-repellent-material-containing layer of the fuel-diffusion layer and the water-repellent-material-containing layer of the oxygen-diffusion layer include a conductive material, respectively, in which the conductive material in the water-repellent-material-containing layer of the fuel-diffusion layer has higher water-repellency than that of the conductive material in the water-repellent-material-containing layer of the oxygen-diffusion layer.

9. The fuel cell as claimed in Claim 3, wherein the water-repellent-material-containing layer is a layer in which the water repellency material is carried by a particulate conductive material.

10. The fuel cell as claimed in Claim 3, wherein the fuel-diffusion layer has the water-repellent-material-containing layers at its both sides.

11. The fuel cell as claimed in Claim 3, wherein the oxygen-diffusion layer has the water-repellent-material-containing layers at its both sides.

12. The fuel cell as claimed in Claim 1, wherein the water contact angle on the surface of the fuel-diffusion layer is larger than the water contact angle on the surface of the oxygen-diffusion layer by at least 5°.

13. The fuel cell as claimed in Claim 1, wherein the water contact angle on the surface of the fuel-diffusion layer is 100 to 160°.

14. The fuel cell as claimed in Claim 1, wherein the water contact angle on the surface of the oxygen-diffusion layer is 90 to 150°.

15. The fuel cell as claimed in Claim 1, wherein the fuel cell uses hydrogen as fuel.

16. A fuel cell device, comprising a fuel cell as claimed in any one of Claims 1 - 15.

17. A fuel cell device, comprising:
a fuel cell main body which includes
(a) a fuel electrode which has a fuel-diffusion layer

Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

- and

18. The fuel cell device as claimed in Claim 17, further comprising water supply means for supplying water to the oxygen electrode.